



2300 Lake Elmo Drive  
Billings, MT 59105

## NOTICE OF DECISION

August 19, 2010

TO: Environmental Quality Council  
Director's Office, Dept. of Environmental Quality  
Montana Fish, Wildlife & Parks\*

Director's Office	Lands Section
Parks Division	Design & Construction
Fisheries Division	Legal Unit
Wildlife Division	Federal Aid Coordinator (when P-R, D-J project)
Regional Supervisors	

Mike Volesky, Governor's Office \*  
Sarah Elliott, Press Agent, Governor's Office\*  
Maureen Theisen, Governor's Office\*  
Montana Historical Society, State Preservation Office  
Janet Ellis, Montana Audubon Council  
Montana Wildlife Federation  
Montana State Library  
George Ochenski  
Montana Environmental Information Center  
Wayne Hirst, Montana State Parks Foundation  
FWP Commissioner Shane Colton\*  
DNRC Area Manager, Southern Land Office  
Scott Barndt, USFS, Bozeman; Scott Shuler, USFS, Livingston; Scott Bosse, American Rivers  
Other Local Interested People or Groups  
\* (Sent electronically)

Ladies and Gentlemen:

A draft environmental assessment (EA) was prepared to evaluate the impacts of a proposed fish barrier on Lower Deer Creek, which would be followed by chemical treatment to remove nonnative brown trout and rainbow x cutthroat trout hybrids. Pure Yellowstone cutthroat trout would be reintroduced to Lower Deer Creek following chemical removal of the fish present. The reintroduced fish will be Yellowstone cutthroat trout salvaged from Lower Deer Creek before piscicide treatment. Mottled sculpin will also be returned to Lower Deer Creek should they be present in the treatment area. The draft EA was circulated for 30 days to interested agencies, groups, and persons. The EA was also posted on Montana Fish, Wildlife & Parks' (FWP) website. Six people, in addition to FWP biologists and their contractor, attended a public meeting held at the Carnegie Public Library in Big Timber on August 4, 2010. Responses to comments offered at the meeting and via letter, mail, calls and visits are included in the attachment.

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After reviewing this proposal and corresponding comments, it is my decision to proceed with this project to construct a fish barrier then treat Lower Deer Creek above the barrier with piscicide to reclaim these waters for Yellowstone cutthroat trout. Two changes in protocol will occur to ensure that the fish kill is limited to the project area. Detoxification at the downstream end will begin before addition of piscicide. In addition, a second back up detoxification will be added in the event that toxicity extends beyond the treatment area. If you have questions regarding this decision notice or wish a copy of the final EA, you may email me at [ghammond@mt.gov](mailto:ghammond@mt.gov), or call me at 247-2951.

Sincerely,

A handwritten signature in dark ink, appearing to read "Gary Hammond", written over a light gray rectangular background.

Gary Hammond  
Regional Supervisor

## **RESPONSE TO COMMENTS REGARDING THE REMOVAL OF BROOK TROUT FROM GOOSE CREEK AND THREE LAKES**

### **Big Timber Meeting Questions/Comments (Summary):**

QUESTION: What kind of fishing pressure does Lower Deer Creek receive?

RESPONSE: As indicated by FWP's angling pressure data, Lower Deer Creek receives relatively light fishing pressure. The most recent data are from 2007, with an estimated 226 angling days for that year. This angling pressure gave Lower Deer Creek a regional ranking of 79, and a state ranking of 558. Although fishing pressure is light, several locals have indicated they greatly value the recreational opportunities, and the ability to harvest fish from Lower Deer Creek. Current regulations allow anglers to keep Yellowstone cutthroat trout from Lower Deer Creek as part of their possession limit, and these regulations will not change following completion of the project.

### **Questions/Comments Received via Calls, E-mails, Visits, and Letters (Summaries):**

COMMENT: "I read with interest the recent story by Brett French announcing Montana Fish Wildlife & Parks' latest misguided plan to construct dams and dump poison into streams in Sweet Grass County. It occurs to me that if anyone other than state fisheries biologists were building dams in natural streams or planning to eradicate every fish, amphibian, reptile, insect and macroinvertebrate from their natural habitats - our community would be in an uproar. Imagine for example that all this aquatic life was being impacted by a massive oil spill...or destroyed by a developer.

RESPONSE: Thank you for your comments. These comments include several mischaracterizations and inaccuracies that should be addressed. First, the mode of piscicide delivery does not entail "dumping", but involves use of drip stations calibrated to deliver the rotenone formulation at the lowest effective concentration of 1 ppm of rotenone. In addition, these comments suggest piscicide treatment would eradicate organisms such as reptiles and amphibians that are not vulnerable to rotenone under the proposed treatment. When applied according to the label's instructions, rotenone is toxic to gill-bearing organisms. Reptiles lack gills and breathe with lungs, and would not be affected by rotenone. Amphibians have gills during their larval stage; however, Lower Deer Creek does not provide suitable rearing habitat for larval amphibians, so these will not be present. Moreover, application of rotenone in fall is after the metamorphosis of any amphibian species likely to occur in the project area. A variety of aquatic invertebrates do not possess gills, and these would not be eradicated. Fish and some gill-bearing aquatic invertebrates will experience mortality, although many

invertebrate taxa are less vulnerable to rotenone than fish, so the assertion that rotenone would eradicate “every...insect and macroinvertebrate” is false.

As described in the EA, the loss of fish and some invertebrate taxa would be temporary. Yellowstone cutthroat trout salvaged before piscicide treatment would be returned to Lower Deer Creek to recolonize the reclaimed waters. Aquatic invertebrates readily recolonize streams through the mechanisms of drift and upstream dispersal of winged adults. In addition, timing piscicide treatment for fall would coincide when a substantial portion of invertebrates would be in the egg phase and not susceptible to rotenone. Lower Deer Creek has 5 miles of stream habitat upstream of the treatment area, which will provide a source of drifting invertebrates.

The EA includes a lengthy literature review and discussion of rotenone toxicity and persistence, and susceptibility of various organisms to rotenone relating to different types of exposure. Interested parties are encouraged to read this information to gain an understanding of the effects of piscicide treatment on aquatic and terrestrial organisms.

COMMENT: “Unfortunately, our local community of anglers, conservationists, non-profits, and scientists has remained mostly silent. Instead, the quiet march of environmental destruction has continued across Montana – by plan and with our funding.”

RESPONSE: With respect to the Lower Deer Creek project, most comments (6 of 8) supported the project as described. Letters of support came from individuals identifying themselves as anglers, conservationists, representatives of nonprofits, and scientists.

COMMENT: It is widely known that dams (what you refer to as "barriers") stop the migration of not just so-called “invasive species” but of all species of fish including those native to the stream system. This is the reason that so many dam REMOVAL projects to restore rivers are going on across the U.S. today.

RESPONSE: Barriers to fish movements have been detrimental to many fish species and populations, including native cutthroat trout. Conversely, numerous unintended barriers have been instrumental in protecting populations of pure cutthroat trout from the hybridization, competition, and predation they experience when nonnative rainbow trout, brown trout, and brook trout invade their habitat. Often, the only cutthroat trout left in a drainage will be those isolated by a natural or human-made barrier. The conservation strategy for cutthroat trout in Montana seeks to maintain connectivity where possible, as connectivity allows for gene flow, maintains a variety of life history strategies, and permits recolonization of areas subjected to catastrophic disturbance. Nonetheless, as cutthroat trout often cannot persist in sympatry (living together) with nonnative fishes, barriers become necessary to save a population, with the acknowledgment that the cost is loss of connectivity.

Considerations in determining whether barrier construction is an appropriate action include the type of risks faced, and the amount of habitat provided. In Lower Deer Creek, invasion of rainbow trout poses an immediate and irreversible threat to the genetic integrity of the population. Without a barrier, hybridization would continue, resulting in the loss of a genetically pure population. Although some individuals may not value the genetic status of a population, the Endangered Species Act does consider genetics, and continued loss of pure populations supports the justification for listing a species as threatened or endangered. State law requires Montana Fish, Wildlife & Parks to implement actions that prevent the inclusion of species for protection under the Endangered Species Act, and this project is consistent with that responsibility.

The amount of habitat protected is another consideration in evaluating if a constructed barrier is an acceptable option to protect a population of native fish. As described in the EA, this project will have a high probability of supporting a population over the long-term because it provides a considerable length of connected habitat. In fact, this project will result in nearly 11 miles of connected habitat free from nonnative fishes. As a result, Lower Deer Creek will have the greatest length of stream habitat available for Yellowstone cutthroat trout in Montana where they do not face hybridization or competition and predation from nonnative trout. Establishing this stronghold for Yellowstone cutthroat trout will have considerable conservation benefit.

COMMENT: The poison (Rotenone) that MT FW&P continues to infer will somehow magically kill only the target non-native fish species continues to kill everything in its path, including in this case the very trout that this expensive and invasive program is by definition intended to “protect” and “restore.”

RESPONSE: The EA does not infer that rotenone will kill only the target nonnative fishes, but is clear that in addition to the target brown trout and rainbow trout hybrids, aquatic invertebrates, mottled sculpin (if present), and Yellowstone cutthroat trout that escape the salvage effort will suffer mortality. With a goal of a 100% fish kill, all fish remaining in the treatment area will perish. Aquatic macroinvertebrates are variable in their vulnerability to rotenone, and recent studies cited in the EA indicate many gilled taxa are able to withstand the concentrations and durations of exposure used in fish eradication projects. Nonetheless, the EA is clear that a substantial portion of aquatic invertebrates will be killed.

The assertion that rotenone “kills everything in its path” is false. All fish and some invertebrates will be killed. Reptiles, adult amphibians, birds, mammals, plants, and many aquatic invertebrates will not experience either long-term or short-term toxic effects relating to rotenone treatment.

With regard to the expense of the program, barrier construction is the largest expense, and this is considerable. Nonetheless, implementing these projects reduces justification for including species for protection under the Endangered Species Act. These actions provide considerable benefit to Montanans, especially those who may lose flexibility in how they manage their lands should the fish become listed. This investment will benefit Yellowstone cutthroat trout and Montanans.

As discussed in the EA, rotenone treatment is the most cost effective approach of meeting the project goal of a secure refuge for Yellowstone cutthroat trout. Mechanical removal would be incredibly expensive given the spatial extent, remoteness of the project area, and the need to continue efforts for years. A similar effort in Soda Butte Creek has been ongoing for over 5 years, and has still not eradicated brook trout despite considerable expense and mobilization of more than 20 fieldworkers per week-long effort. Furthermore, rainbow trout hybrids eluding capture would continue to reproduce with Yellowstone cutthroat trout, further jeopardizing the population's genetic status.

COMMENT: I would ask you and your agency to carefully consider the significant long-term adverse impacts that will result from this project. Further, I would respectfully request that Montana Fish Wildlife & Parks complete and release for public review a full Environmental Impact Statement (EIS) including consideration of all impacts to other threatened or protected species that rely on this ecosystem for their survival. Your DRAFT Assessment's finding "the impacts of barrier construction, piscicide treatment, and restocking of Yellowstone cutthroat trout ...would have minor, temporary impacts on the environment and social considerations, and no effects on cultural or economic considerations" is not scientifically nor factually credible.

RESPONSE: The EA released for public review does carefully consider the long and short-term effects of this project, devotes nearly 30 pages to this analysis, and includes reference to, or review of, over 50 publications addressing toxicity and persistence of rotenone, cutthroat trout conservation, fish genetics, and other topics related to native species conservation, barriers and piscicide. The EA includes a section evaluating impacts to other threatened and protected species, so reissuing an analysis in the form of an EIS would be redundant. The conclusion that the proposed project would benefit Yellowstone cutthroat trout, and result in "minor, temporary impacts on the environment and social considerations, and no effects on cultural or economic considerations," follows careful consideration of the available science.

COMMENT: I understand that the Montana Department of Fish Wildlife and Parks plans to dump poison into streams in Sweetgrass County, including Lower Deer Creek and others. The goal of this project is apparently to eliminate non-native Brown trout and to help native Cutthroat survive. Although the goal of helping Cutthroat populations to become sustainable is a good one, I do not believe the method

being planned is acceptable. Poisoning these streams with Rotenone will kill much more than brown trout—it will also wipe out other fish species as well as insects, amphibians, reptiles and plants. Re-colonization is a hit-and-miss proposition for such eliminated species. This approach is like trying to swat a mosquito with a sledgehammer--the collateral damage would be extensive. As a taxpayer, I do not want my tax dollars paying for a destructive program such as poisoning of streams.

RESPONSE: Thank you for your comments. These comments contain several inaccuracies. As detailed in the EA, rotenone will not eradicate reptiles, amphibians, or plants. At the treatment levels proposed, rotenone does not result in acute toxicity to organisms lacking gills, which includes reptiles and adult amphibians. Rotenone is not toxic to plants, as evidenced by its effectiveness as a pesticide in organic gardening. Rotenone breaks down rapidly in the environment, and addition of potassium permanganate will expedite breakdown and limit the extent of the fish kill to the project area. As a result, organisms in and around Lower Deer Creek will not experience chronic exposure to rotenone. Macroinvertebrates recover rapidly from this type of disturbance with larval drift and upstream dispersal of winged adults being the primary mechanisms. Lower Deer Creek has the advantage of having several miles of stream habitat upstream of the barrier falls, which will provide a source of drifting invertebrates.

The EA considers several alternatives to piscicide treatment including mechanical removal of nonnatives through angling or electrofishing, and doing nothing to protect Lower Deer Creek's core population of Yellowstone cutthroat trout. Piscicide treatment was the only alternative that would result in the attainment of what you acknowledge is good goal, namely helping the Yellowstone cutthroat trout population persist over the long term.

COMMENT: As evidenced by our financial support to the project, Magic City Fly Fishers strongly supports the designed and implementation of a barrier to protect existing populations, and the use of piscicides above the barrier to remove non-native species.

We look forward to the day in the very near future when nearly 11 miles of habitat will be occupied by a thriving population of genetically pure Yellowstone cutthroats.

Thank you for your research, determination and hard work!

RESPONSE: Thank you for your comments and support.

COMMENT: The Joe Brooks Trout Unlimited chapter of Livingston, Montana strongly supports MT Fish, Wildlife & Parks proposed restoration project for Yellowstone

cutthroat trout in Lower Deer Creek. The project's objectives and methods are sound, and the likelihood of success for this project is very good.

The Lower Deer Creek drainage is an important core area for Yellowstone cutthroat trout. Because this project seeks to protect a population of genetically pure Yellowstone cutthroats, and will do so in an important spawning tributary of the middle Yellowstone River basin, it should be recognized as high priority restoration project by MTFWP. By removing non-native species and securing Yellowstone cutthroats from hybridization, this project fits with objectives identified in the State of Montana Cutthroat MOU and Conservation Plan for Westslope Cutthroat and Yellowstone Cutthroat in Montana (2009) and the Conservation Strategy for Yellowstone Cutthroat in the States of Idaho, Montana, Nevada, Utah and Wyoming (2009).

The Joe Brooks TU chapter believes this is a very important project for the continued efforts to increase specific populations of genetically pure Yellowstone cutthroat trout, and that is why our chapter has financially contributed to this specific project. Please let us know what we can do to help ensure the success of this project.

RESPONSE: Thank you for your comments and support.

COMMENT: Montana Trout Unlimited, which represents 3,400 conservation-minded anglers, strongly supports FWP's proposed restoration project for Yellowstone cutthroat trout in Lower Deer Creek. The project's objectives and methods are sound, and the likelihood of success, in our estimation, is high.

The Lower Deer Creek drainage is an important core area for Yellowstone cutthroats. Because this project seeks to protect a population of genetically unaltered Yellowstone cutthroats, and will do so in an important tributary of the middle Yellowstone basin, it should be a high priority as a restoration project. By removing non-native species and securing cutthroats from hybridization, the project fits squarely with objectives identified in the State of Montana Cutthroat MOU and Conservation Plan for Westslope Cutthroat and Yellowstone Cutthroat in Montana (2009) and the Conservation Strategy for Yellowstone Cutthroat in the States of Idaho, Montana, Nevada, Utah and Wyoming (2009).

We believe this is a very important project, and that is why several of our chapters have contributed financing and why serving as technical reviewers for several other funding sources we have been strongly supportive. Please let us know what we can do to help ensure the success of this project.

RESPONSE: Thank you for your comments and support.



COMMENT: Comments provided by American Rivers indicate their support for the project, and recognizes the status of Yellowstone cutthroat trout justifies implementing these actions. The letter includes two “relatively minor” concerns. “First, the draft Environmental Assessment states that 500-1,000 Yellowstone cutthroat trout will be captured from the treatment area and held in live cars further upstream until all non-native fish have been removed, While these YCT are being held, a subsample of these fish will be tested to ensure they are genetically pure. Because two rotenone treatments spanning one week may be necessary to ensure that all non-native fish have been removed, we would like to highlight the need for FWP to have sufficiently large live cars on site in order to ensure that the captured fish can survive for such a long time.

“Our second concern relates to the application of rotenone. While American Rivers recognizes that piscicides are an invaluable tool in native fish restoration projects and they have been safely used in Montana for over half a century, we urge FWP to take extra care to ensure that everything goes exactly as planned in Lower Deer Creek. Given the recent incident at Cherry Creek where hundreds of adult trout downstream of the treatment area were unintentionally killed, anglers, the public and the media will be scrutinizing this project carefully.

RESPONSE: Thank you for your support.

Holding fish in stream does present challenges. The plan is to hold fish in 50 to 60 net pens measuring 2 by 6 feet. We would hold these fish in Placer Creek and West Fork Lower Deer Creek in fishless portions above the piscicide treatment. These reaches have enough water to hold fish over this duration. In addition, we would hold fish in pens on Lower Deer Creek above the barrier falls. We agree that this concern is valid. As an added measure, we will construct a block net upstream of the waterfall on Lower Deer Creek and transplant adult Yellowstone cutthroat trout to the reach. Of course, maintaining a block net requires constant maintenance to prevent build up of debris; however, we will devote a fieldworker to maintaining this net in the stream. Holding fish in several locations and maintaining fish behind a block net above the waterfall will increase the likelihood of having sufficient survival of salvaged fish to provide for recolonization of the treated reach. The final EA will expand on the logistics of transporting and holding live Yellowstone cutthroat trout.

The travel of toxic concentrations of rotenone beyond the intended treatment reach is not a scenario we will repeat. The following protocols will prevent this from recurring. First, we will begin the detoxification at the downstream end of the project area before we begin to apply rotenone. In addition, we will be vigilant in monitoring the sentinel fish at the downstream end of the project area, and at the back up detoxification station. As an added safeguard, we will add second back up detoxification station another 15 minute of travel time from the first station, and be prepared to add additional potassium permanganate in the event the rotenone travels below the second detoxification station.

COMMENT: A Big Timber resident called to suggest that we salvage some fish and provide these to local senior citizens for food.

RESPONSE: According to the EPA (2007<sup>1</sup>), consuming rotenone-killed fish does not pose a acute or chronic risk to humans. Indeed, Native Brazilians have been using rotenone to acquire fish for consumption for centuries with no apparent ill effects. Nonetheless, some people may be reluctant to eat fish killed through this method. FWP will be salvaging Yellowstone cutthroat trout using electrofishing before rotenone treatment, and these sampling efforts will yield nonnative brown trout as well. FWP will coordinate with the caller to investigate this option.

COMMENT: I just wanted to voice my support along with that of the Montana Water Project of Trout Unlimited, Inc. for the Lower Deer Creek Yellowstone Cutthroat Conservation Project. As you know, I was involved with the project at its inception and have a decided positive bias toward the project. However, the Upper Yellowstone watershed is a priority of the Montana Water Project as we endeavor to implement Trout Unlimited's mission to protect, reconnect, restore and sustain native and wild trout populations throughout Montana. We have a particular interest in restoring and enhancing Yellowstone cutthroat trout throughout their native range.

After reviewing the Environmental Assessment (EA), we offer the following comments to consider as the project proceeds. Primarily, we believe that this project is particularly important considering how rare native, stream-dwelling Yellowstone cutthroat trout populations have become east of the Big Timber area.

We firmly believe that protecting, restoring, and replicating extant populations is a key to long-term conservation of the subspecies. Secondly, we are concerned anytime toxic substances are injected into streams. However, we believe that rotenone is a critical tool in the conservation of native and wild fish. When applied judiciously by well-trained personnel, rotenone can be very effective in removing unwanted fish while minimizing damage to the ecology of the stream. While we support the application of rotenone in Lower Deer Creek for the conservation of the cutthroat population, we urge caution and diligence during the project.

Thirdly, in your final EA we would appreciate some elaboration on the process you intend to undertake to capture Yellowstone cutthroat trout and place in live cars away from the treatment area. While I am sure you have thought it through, the logistics of transporting live fish in that rough and isolated country will be challenging. It would be interesting to know what steps you will take between electrofishing and releasing them into live cars.

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<sup>1</sup> U.S. Environmental Protection Agency. 2007. Re-registration Eligibility Decision for Rotenone. EPA 738-R-07-005.

Finally, how confident are you that you can identify rainbow-cutthroat hybrid ? Is it possible to get your genetic subsample analyzed for hybridization in the short time between capture, treatment and release without holding the fish for too long?

RESPONSE: Thank you for your support and comments.

We appreciate your concern over the need for caution and diligence in the use of piscicide. The recent escape of toxic concentrations of rotenone in Cherry Creek highlights the need for extreme care in using rotenone. To that end, we have strengthened the detoxification protocol to include a second, back up detoxification station, and we will begin applying potassium permanganate before release of rotenone into Lower Deer Creek.

Transporting and maintaining live fish will be a challenge. By waiting until early fall to salvage fish, temperatures should be cooler, which will reduce thermal stress on fish. We will transport the fish in oxygenated coolers using helicopters and 4 wheelers. As described in our response to American River's similar inquiry, we have found several locations in tributaries and above the waterfall on Lower Deer Creek that are suitable for holding fish. In addition, constructing a net barrier to prevent downstream movement of fish over the waterfall will allow for some fish to be release directly into Lower Deer Creek above the treatment area. The final EA will expand on the approach to transporting and holding live fish in a way that minimizes mortality and ensures a sufficient number of fish to recolonize the treated area.

Thus far, field identification of hybrids has been obvious. Hybrids have a spotting pattern similar to rainbow trout with large spots extending the length of their body. In addition, they have had the diagnostic rainbow lateral stripe. Genetic evaluations of presumed pure Yellowstone cutthroat trout have not detected any hybrids misidentified as pure. We will further minimize the risk of accidentally transporting hybrids by concentrating salvage efforts in reaches where none have been captured as of yet. We conducted an extensive fish survey and mechanical removal of hybrids in July of this year, which has allowed us to map invasion of hybrids, and identify areas for salvage. We have arranged for a rapid turnaround on genetic analyses, so we can verify genetic status before reintroducing Yellowstone cutthroat trout to Lower Deer Creek.